NATIONAL
Boilers and Radiators

NATIONAL RADIATOR COMPANY

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CATALOG
No. 35

NATIONAL RADIATOR COMPANY
GROWN FROM A SINGLE FOUNDRY IN 1894—BECAUSE THE CUSTOMER SO DICTATED
GENERAL OFFICES, JOHNSTOWN, PA.

Prices published in this edition supersede all former lists and are subject to change without notice. Discounts are quoted to regular trade only.

NATIONAL Heating materials have been produced continuously since 1894. They are warming thousands of buildings large and small throughout the United States and Canada as well as Foreign countries. We consequently call attention to the many years of satisfactory service back of National products. In its 30 years of manufacturing experience, the National Radiator Company has been responsible for some of the most important improvements and improvements in Cast Iron Boiler and Radiator manufacture. It was the first to perfect and adopt the Malleable Cast Iron Push Nipple, the first to adopt the Hexagon type of a radiator and standard, and the first to simplify the multiplicity of radiator patterns and heights as introducing the Arco radiator. In this manner One type of sections, cap and bottom nipple connected. Three Patterns and Sixteen Heights comprise the entire line. Each radiator is rated for both Steam and Hot Water and any radiator consequently can be used for Steam, Hot Water, Vacuum, Vapor Vacuum or any approved method of heating.

NATIONAL RADIATOR COMPANY
Johnstown, Pa.

BRANCHES

New York	47 W. 42nd Street
Philadelphia	121 N. Broad Street
Baltimore	2622 Frisby Street
Washington	1228 H Street
Pittsburgh	Rms. 1402-5 Arrott Bldg.
Chicago	1035-1106 S. Kolmar Ave.
Cincinnati	Rm. 827 Union Central Bldg.
Cleveland	6308 Kinsman Road
Richmond	1516 E. Cary Street

Plants in Which National Heating Materials Are Made

Johnstown, Pa., Plant

Trenton, N. J., Plant

New Castle, Pa., Plant

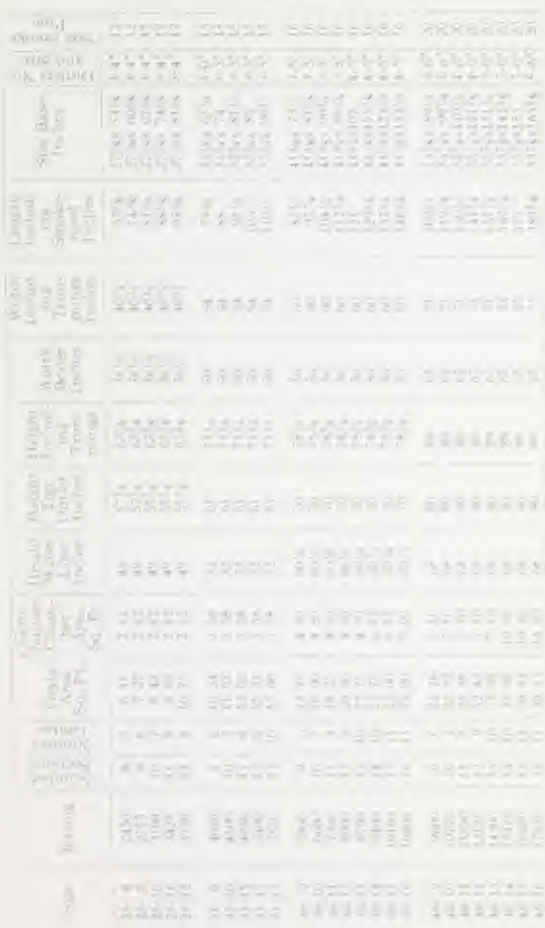
Smokeless Steam Boiler

[illegible]

THE National Up-Draft Smokeless Boiler, as [illegible] to the proper use that will furnish most perfect combustion that has yet been secured in any Low Pressure Heating Boiler. It will comply with any Smoke Ordinance and will reduce Fuel Bills very materially. Being made of cast iron, it will last as long as the building itself.

Ratings and Measurements

STEAM



Patents Granted

Sectional View Smokeless Boiler

The National Up Draft Smokeless Boiler shows an increase of approximately 28 per cent in evaporation as compared with a regular surface burning boiler and on the same amount of fuel charged. That it is smokeless is evidenced by the smoke density at the stack being reduced to the Ringelmann No. 1 Smoke Screen in about seven seconds after firing a new charge of coal. It positively will burn smoke and gases which ordinarily pass out the chimney and are wasted —it will reduce operating costs.

Ratings and Measurements

WATER

Size	Rating	Number Sections	Number Grates	Grate Area Sq. Ft.	Combustion Chamber Area Sq. Ft.	Height Top Outlet Inches	Width Boiler Inches	Length Including Smokehood Inches	Size Base Inches	Outlets No. and Size	Size Smoke Pipe Inches
8–25	4000	8	5	6 11	2 32	57¾	36½	67⅝	27⅝ x 53⅜	3–4″	12
9–25	4550	9	6	7 27	2 32	57¾	36½	74⅝	27⅝ x 60⅝	3–4″	12
10–25	5100	10	7	8 43	2 32	57¾	36½	81⅝	27⅝ x 67⅝	3–4″	12
11–25	5650	11	8	9 59	2 32	57¾	36½	88⅛	27⅝ x 74⅝	3–4″	12
12–25	6200	12	9	10 75	2 32	57¾	36½	95⅝	27⅝ x 81⅝	3–4″	12
9–31	6675	9	6	10 24	3 38	61	50	79¼	33⅛ x 65¼	3–5″	15
10–31	7425	10	7	11 93	3 38	61	50	88	33⅛ x 74	3–5″	15
11–31	8175	11	8	13 62	3 38	61	50	95⅛	33⅛ x 81⅛	3–5″	15
12–31	8925	12	9	15 31	3 38	61	50	103	33⅛ x 89	3–5″	15
13–31	9675	13	10	17 00	3 38	61	50	110½	33⅛ x 96½	3–5″	15
9–36	9750	9	6	13 75	4 50	70	56	87½	41⅜ x 73½	3–5″	16
10–36	10900	10	7	16 00	4 50	70	56	95⅞	41⅜ x 81⅞	3–5″	16
11–36	12050	11	8	18 25	4 50	70	56	104¼	41⅜ x 90¼	3–5″	16
12–36	13200	12	9	20 50	4 50	70	56	112⅝	41⅜ x 98⅝	3–5″	16
13–36	14350	13	10	22 75	4 50	70	56	121	41⅜ x 107	4–5″	16
14–36	15500	14	10	22 75	6 75	70	56	129⅜	41⅜ x 115⅛	4–5″	16
15–36	16650	15	11	25 00	6 75	70	56	137¾	41⅜ x 123¼	4–5″	16
16–36	17800	16	11	25 00	9 00	70	56	146⅛	41⅜ x 132⅛	4–5″	16
9–48	15825	9	6	21 78	7 10	80	67	109¼	53⅜ x 89¼	3–6″	20
10–48	17775	10	7	25 33	7 10	80	67	119⅝	53⅜ x 99⅝	3–6″	20
11–48	19725	11	8	28 88	7 10	80	67	130½	53⅜ x 110½	4–6″	20
12–48	21675	12	9	32 43	7 10	80	67	141⅜	53⅜ x 121⅜	4–6″	20
13–48	23625	13	10	35 98	7 10	80	67	151¾	53⅜ x 131¾	5–6″	20
14–48	25575	14	10	35 98	10 65	80	67	162⅛	53⅜ x 142⅛	5–6″	20
15–48	27525	15	11	39 53	10 65	80	67	173	53⅜ x 153	5–6″	20
16–48	29475	16	11	39 53	14 20	80	67	183⅝	53⅜ x 163⅝	5–6″	20

Additional measurements, pages 9 and 10. Covering, page 41. Assembling chart, page 8. Chimneys, page 11.

Smokeless Boiler Assembling Chart

Foundation Plan
National Up-Draft Smokeless Boiler

25" BOILER

No. Sec.	No. Grates	A	B	C	D	E	F	G
8	5	31"	30⅛"	27⅛"	53⅛"	37⅛"	8	6⅞"
9	6	35"	30⅛"	27⅛"	60⅛"	41⅝"	8	6⅞"
10	7	43"	30⅛"	27⅛"	67⅛"	51⅝"	8	7⅛"
11	8	52"	30⅛"	27⅛"	74⅛"	58⅛"	8	6⅞"
12	9	59"	30⅛"	27⅛"	81⅛"	65⅛"	8	6⅞"

31" BOILER

9	6	41¼"	26¼"	33¼"	69¼"	47⅛"	8	9⅛"
10	7	48¼"	26¼"	33¼"	76"	54⅛"	8	9⅛"
11	8	56¼"	26¼"	33¼"	81⅛"	62¼"	8	9⅛"
12	9	63¼"	26¼"	33¼"	89"	69¼"	8	9⅛"
13	10	71¼"	26¼"	33¼"	96⅛"	77¼"	8	9⅛"

36" BOILER

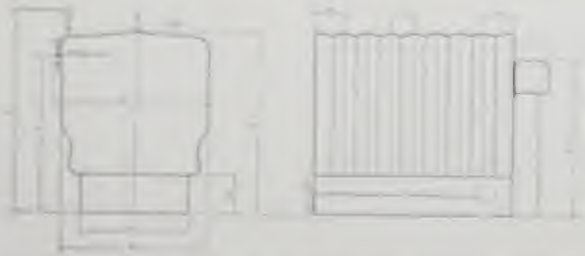
9	6	47⅛"	32⅛"	41⅛"	73⅛"	53⅛"	8	10⅛"
10	7	56"	32⅛"	41⅛"	81⅛"	62"	8	10⅛"
11	8	64⅛"	32⅛"	41⅛"	90¼"	70⅛"	8	10⅛"
12	9	72¼"	32⅛"	41⅛"	98⅛"	78¼"	8	10⅛"
13	10	81⅛"	32⅛"	41⅛"	107"	87⅛"	8	10⅛"
14	10	81⅛"	32⅛"	41⅛"	115⅛"	87⅛"	8	10"
15	11	89¼"	32⅛"	41⅛"	123¼"	95⅛"	8	10"
16	11	89¼"	32⅛"	41⅛"	132⅛"	95⅛"	8	9⅞"

48" BOILER

9	6	58⅛"	44¼"	53⅛"	89¼"	65⅛"	8	14"
10	7	69⅛"	44¼"	53⅛"	99⅛"	76¼"	8	14"
11	8	79¼"	44¼"	53⅛"	110⅛"	86¼"	8	14"
12	9	90⅛"	44¼"	53⅛"	120⅛"	97⅛"	8	14"
13	10	101"	44¼"	53⅛"	131¼"	108"	8	14"
14	10	101"	44¼"	53⅛"	142⅛"	108"	8	13⅞"
15	11	111⅛"	44¼"	53⅛"	153"	118⅛"	8	13⅞"
16	11	111⅛"	44¼"	53⅛"	163⅛"	118⅛"	8	13¾"

NOTE—It is very important in providing a foundation for the National Up-Draft Smokeless Boiler that care be used that the Closed Chamber under Bridge-Wall does not extend over pit. This Closed Chamber must be air tight to insure perfect results from Pocketing Air Device.

Measurements



Steam and Water (Inches)

Size Boiler	A	B	C	D	E	F	G	H	I	J	K	L	M	Size of Fire Door
0-Inch	27¾	22½	9⅞	10	4¾	13½	9¾	9½	5¼	14	10¼	16	1⅞	10 x 7¾
0-Inch	33¾	28	14	12	6½	15¼	10¾	10	7¼	14	12	17½	1⅞	11 x 8¾
0-Inch	42¾	36	18¼	15	7½	17¾	11¾	11	8¾	14	15¾	18½	1⅞	13 x 9¾
0-Inch	51¾	45	23	18	9½	20	14½	13¾	10¾	14	19¼	20	1⅞	16 x 11

Equipment

A complete set of Fixing Tools is furnished with all National Up-Draft Smokeless Boilers. This includes a slice bar, wire flue brush with handle, a poker with long handle for cleaning Ashpit and a rake with short handle for cleaning under Bridge Wall and Combustion Chamber.

Steam Boiler mountings including Bridge for steam valves, try cocks, gun safety valve, steam gauge and Syphon. All-Metal Damper Regulator. The latter is made of the best grade of steam metal. Is very sensitive and practically indestructible.

Chimneys

Heating boilers give greatest efficiency and save coal for owners when attached to chimneys which are properly constructed and designed. It is important that they be straight and smooth and of the proper area and height. It is claimed that badly built or too small flues cause a waste of one-third of all the coal that is burned in heating plants.

Minimum Chimney Flue Sizes and Heights Recommended for Low Pressure Steam and Hot Water Boilers

Area dimensions given are inside measurements of the masonry walls of the chimney.

Boiler Capacity		Number of Heaters Attached to Flue							
		1		2		3		4	
Hot Water Rating Sq. Ft.	Steam (Direct) Rating Sq. Ft.	Dim. In.	Height Feet	Heaters Cross-connected forming a battery and attached to one flue opening					
				Dim. In.	Height Feet	Dim. In.	Height Feet	Dim. In.	Height Feet
To 700	To 450	8x12	30						
900	600	8x12	35						
1100	700	8x12	40						
1400	1000	12x12	35						
2000	1500	12x12	40	12x16	35	16x20	30	20x20	35
3000	2500	12x16	40	16x20	30	20x24	35	24x24	40
3800	3000	16x16	45	20x24	35	24x28	40	28x28	45
5400	4500	16x20	50	24x24	40	28x32	45	32x32	50
6700	5400	20x20	55	24x28	45	32x32	50	32x36	55
10800	9000	20x24	60	28x28	50	32x36	55	36x36	60
12000	7400	24x24	65	32x32	55	36x36	60	40x40	65
14000	8400	24x28	65	32x32	55	36x36	60	40x40	65
12000	9400	28x28	70	32x36	60	36x36	60	42x42	70
17000	10400	28x32	70	32x36	60	36x36	60	42x42	70
19000	11400	30x30	70	36x36	60	42x42	60	48x48	70
20000	12400	32x32	70	40x40	60	52x52	60	56x56	70
22000	13400	32x32	70	40x40	60	52x52	60	56x56	70
24000	14400	32x32	70	40x40	60	52x52	60	56x56	70
25000	15400	32x32	70	40x40	60	52x52	60	56x56	70
21000	16400	34x34	80	44x44	60	54x54	100	64x64	110
28000	17400	34x34	80	44x44	60	54x54	100	64x64	110

Notes:—When round tile flue lining is used in place of rectangular, the nearest corresponding area shall be taken.

Acme Steam Boilers

No.	Height to Top of Casing	Height to Top of Smoke Connection	Diameter of Shell	Diameter of Fire Box	No. of Tubes	No. of Square Feet of Heating Surface	No. of Square Feet of Grate Surface	Rating
1	40½	40½	18	12	14	15	1	10
2	40½	40½	18	12	14	15	1	10
3	40½	40½	18	12	14	15	1	10
4	40½	40½	18	12	14	15	1	10
5	40½	40½	18	12	14	15	1	10
6	40½	40½	18	12	14	15	1	10
7	40½	40½	18	12	14	15	1	10
8	40½	40½	18	12	14	15	1	10
9	40½	40½	18	12	14	15	1	10
10	40½	40½	18	12	14	15	1	10
11	40½	40½	18	12	14	15	1	10
12	40½	40½	18	12	14	15	1	10
13	40½	40½	18	12	14	15	1	10
14	40½	40½	18	12	14	15	1	10
15	40½	40½	18	12	14	15	1	10
16	40½	40½	18	12	14	15	1	10
17	40½	40½	18	12	14	15	1	10
18	40½	40½	18	12	14	15	1	10
19	40½	40½	18	12	14	15	1	10
20	40½	40½	18	12	14	15	1	10
21	40½	40½	18	12	14	15	1	10
22	40½	40½	18	12	14	15	1	10
23	40½	40½	18	12	14	15	1	10
24	40½	40½	18	12	14	15	1	10

Acme Water Boilers

No. or Boiler	Height to Top of Outlets, Inches	Outside Diam. of Base, Inches	Normal Depth of Firepot, Inches	No. and Size of Outlets, Inches	No. and Size of Inlets, Inches	Size of Smoke Pipe, Inches	Rating
No. 1 Series—Base, Combustion Firepot, Center Section and Dome							
P-1171	42½	24	17	2-2½	2-1½	7	500
P-1179	49½	26	19	2-2½	2-1½	8	740
P-1185	44½	29	22	2-3	2-2	9	950
P-1193	49½	32	25	2-4	2-2	10	1,200
No. 2 Series—Base, Combustion Firepot, Two Center Sections and Dome							
P-2171	46½	24	17	2-2½	2-1½	7	620
P-2179	47½	26	19	2-2½	2-1½	8	780
P-2185	46½	29	22	2-3	2-2	9	980
P-2193	50½	32	25	2-4	2-2	10	1,200
No. 3 Series—Base, Combustion Firepot, Three Center Sections and Dome							
P-3171	51½	24	17	2-2½	2-1½	7	680
P-3179	52½	26	19	2-2½	2-1½	8	820
P-3185	51½	29	22	2-3	2-2	9	1040
P-3193	54½	32	25	2-4	2-2	10	1,300
No. 4 Series—Base, Combustion Firepot, Four Center Sections and Dome							
P-4193	59½	32	25	2-4	2-2	10	1,400

For additional measurements, see pages 13 and 14.
Arranged for gas and for liquid fuels for domestic purposes.
Control, page 41.

Acme Boiler Measurements

Drums—Measurements are in Inches

Size	A	B	C	D	E	F	Approx. Weight

Acme Boiler Measurements

Water—Measurements are in Inches

Acme	B	C	D	E	F	Size of Fire Door
P-1117	14 3/4	24	19	42 1/2	14 9/16	8 1/2 x 11 1/2
P-2117	14 3/4	24	19	46 7/8	14 9/16	8 1/2 x 11 1/2
P-3117	14 3/4	24	19	51 1/4	14 9/16	8 1/2 x 11 1/2
P-1119	14 3/4	26	20	43 7/8	16 3/8	8 1/2 x 11 1/2
P-2119	14 3/4	26	20	47 5/8	16 3/8	8 1/2 x 11 1/2
P-3119	14 3/4	26	20	52 1/8	16 3/8	8 1/2 x 11 1/2
P-1122	15 1/16	29	20 1/2	44 1/4	18 5/16	8 1/2 x 13 1/2
P-2122	15 1/16	29	20 1/2	48 3/4	18 5/16	8 1/2 x 13 1/2
P-3122	15 1/16	29	20 1/2	53 1/8	18 5/16	8 1/2 x 13 1/2
P-1125	15 1/16	32	21 1/4	45 1/2	21 1/16	8 1/2 x 13 1/2
P-2125	15 1/16	32	21 1/4	50 3/4	21 1/16	8 1/2 x 13 1/2
P-3125	15 1/16	32	21 1/4	54 7/8	21 1/16	8 1/2 x 13 1/2
P-4125	15 1/16	32	21 1/4	59 1/8	21 1/16	8 1/2 x 13 1/2

THREE PIECE FIREPOT

Patented

RATINGS AND MEASUREMENTS

(Dimensions in Inches)

No. Steam	Eight Hour Ratings	Height to Top Outlet	Extreme Depth Boiler	Size Base	Grate Area Sq. Ft.	2 Outlets 2 Inlets Size	Height Water Line	Height Top Smoke-hood	Size Smoke Pipe
No. 0 Series—Base, Three-piece Firepot (with Crown Sheet) and Dome.									
30–S	535	53	31½	30x25	2 34	3	46⅞	61	9
40–S	700	53	36½	30x30	2 98	3	47⅛	61	9
50–S	940	54½	38½	36x30	4 16	4	48¼	62½	10
60–S	1175	54½	44	36x36	5 05	4	48⅜	62½	10
No. 1 Series—Base, Three-piece Firepot (with Crown Sheet) Center Section and Dome.									
31–S	570	57½	31½	30x25	2 34	3	51⅜	65½	9
41–S	750	57½	36½	30x30	2 98	3	51¾	65½	9
51–S	1000	59½	38½	36x30	4 16	4	53¼	67½	10
61–S	1250	59½	44	36x36	5 05	4	53⅜	67½	10
No. 2 Series—Base, Three-piece Firepot (with Crown Sheet), two Center Sections and Dome.									
32–S	600	62	31½	30x25	2 34	3	55¾	70	9
42–S	800	62	36½	30x30	2 98	3	56⅛	70	9
52–S	1050	64½	38½	36x30	4 16	4	58⅛	72½	10
62–S	1325	64½	44	36x36	5 05	4	58⅛	72½	10

For additional measurements, see pages 18 and 19

Arranged for pipe coil for heating water for domestic purposes.

Do not bush flow outlets on steam boilers. Connect full size to main where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Covering page 41.

THREE PIECE FIREPOT

Patented

RATINGS AND MEASUREMENTS

(Dimensions in Inches)

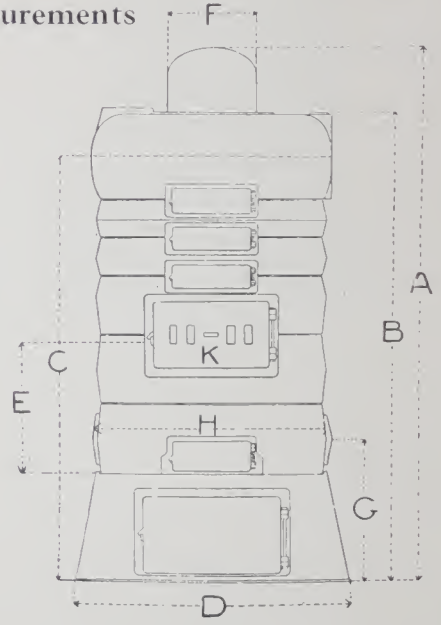
No. Water	Eight Hour Ratings	Height to Top Outlet	Extreme Depth Boiler	Size Base	Grate Area Sq. Ft.	2 Outlets 2 Inlets Size	Height Top Smoke-hood	Size Smoke Pipe
No. 0 Series—Base, Three-piece Firepot (with Crown Sheet) and Dome.								
30-W	880	46½	31½	30x25	2 34	3	54	9
40-W	1155	46½	36½	30x30	2 98	3	54	9
50-W	1550	48	38½	36x30	4 16	4	56	10
60-W	1940	48	44	36x36	5 05	4	56	10
No. 1 Series—Base, Three-piece Firepot (with Crown Sheet), Center Section and Dome.								
31-W	940	51	31½	30x25	2 34	3	58½	9
41-W	1240	51	36½	30x30	2 98	3	58½	9
51-W	1650	53	38½	36x30	4 16	4	61	10
61-W	2065	53	44	36x36	5 05	4	61	10
No. 2 Series—Base, Three-piece Firepot (with Crown Sheet) two Center Sections and Dome.								
32-W	990	55½	31½	30x25	2 34	3	63	9
42-W	1320	55½	36½	30x30	2 98	3	63	9
52-W	1735	58	38½	36x30	4 16	4	66	10
62-W	2185	58	44	36x36	5 05	4	66	10

For additional measurements, see pages 18 and 19.
Arranged for pipe coil for heating water for domestic purposes.
Covering, page 41.

On the opposite page there is a table giving all measurements applying to this illustration. Outline does not represent water boiler. The outline of the steam boiler is used to show the measurements of both the steam and water types.

For convenience in ordering repairs for firepot, we have numbered each section from the bottom and up.

Measurements



Center to Center Outlet Opening Measurements

30–40 Series		50 Series		60 Series	
W	S	W	S	W	S
16¾ Inches	16¼ Inches	21¼ Inches	22 Inches	21 Inches	22 Inches

The following table gives all the measurements in inches on National Novus Steam and Hot-Water Boilers, upright types.

STEAM

Size	A	B	C	D	E	F	G	H	K
30–S	61	53	46⅞	30	17⅛	10	18⅞	25	12 x8
31–S	65½	57½	51⅜	30	17⅛	10	18⅞	25	12 x8
32–S	70	62	55⅞	30	17⅛	10	18⅞	25	12 x8
40–S	61	53	47⅛	30	17⅛	10	18⅞	25	12 x8
41–S	65½	57½	51⅜	30	17⅛	10	18⅞	25	12 x8
42–S	70	62	55⅞	30	17⅛	10	18⅞	25	12 x8
50–S	62½	54½	48¼	36½	18⅛	11¾	19	32	14½x8¼
51–S	67⅛	59½	53¼	36½	18⅛	11¾	19	32	14½x8¼
52–S	74½	66½	58¾	36½	18⅛	11¾	19	32	14½x8¼
60–S	62½	54½	48⅛	36½	18⅛	11¾	19	32	14½x8¼
61–S	67½	59½	53⅛	36½	18⅛	11¾	19	32	14½x8¼
62–S	74½	66½	58	36½	18⅛	11¾	19	32	14½x8¼

WATER

Size	A	B	C	D	E	F	G	H	K
30–W	54	46½		30	17½	10	18¾	25	12 x8
31–W	58½	51		30	17⅝	10	18⅞	25	12 x8
32–W	63	55½		30	17⅝	10	18⅞	25	12 x8
40–W	54	46½		30	17⅝	10	18⅞	25	12 x8
41–W	58½	51		30	17⅝	10	18⅞	25	12 x8
42–W	63	55½		30	17⅝	10	18⅞	25	12 x8
50–W	56	48		36½	18⅝	11¾	19	32	14½x8¼
51–W	61	53		36½	18⅝	11¾	19	32	14½x8¼
52–W	66	58		36½	18⅝	11¾	19	32	14½x8¼
60–W	56	48		36½	18⅝	11¾	19	32	14½x8¼
61–W	61	53		36½	18⅝	11¾	19	32	14½x8¼
62–W	66	58		36½	18⅝	11¾	19	32	14½x8¼

ADDITIONAL MEASUREMENTS

Series of Boiler (Upright)	Actual Size of Grate Inches	Depth of Ashpit Under Grate Inches	Size of Ash Base Inches	Height of Ash Base Inches	Size of Fire Door Opening Inches	Width of Boiler Inches	Extreme Length of Boiler Inches
30	19½x19¾	11	20 x20	14½	8 x12	38	31⅛
40	19½x20½	11	20 x20	14½	8 x12	38	36¼
50	25½x21	10½	26½x20½	14½	8½x14½	42	38½
60	26½x26½	10½	26½x27½	14½	8½x14½	42	44

Note—On steam boiler add 4 inches to width of Extent for Steam Trimmings.

No. 20 N.S.

Twenty Series Sectional Steam Boilers

No. of Sections	Rating Sq. Ft.	Diameter of Flue Inches	No. of Doors	Length Inches	Height Inches	Steam Connection Inches	Weight Lbs.
20 N.S.	300	20	1	3 10	4 10	2½ Flange	1 1
20 N.S.	400	20	1	4 10	4 10	2½ Flange	1 3
20 N.S.	500	20	1	5 10	4 10	2½ Flange	1 5

Diameter of largest section, 30 inches. Width of boiler, 30 inches.
Size of steam dome, 30 inches. Weight of water in boiler, 2 lbs. per sq. ft.
Grate surface per section, 10 sq. ft.
Size of ash pit, 30 inches.
Size of fire door, 12 inches by 12 inches.
Size of feed connection, 1 inch.
Size of blow off, 1 inch.
Size of flue, 20 inches.
Size of chimney, 20 inches.
Size of steam dome, 30 inches.

No. 6-20-W

Twenty Series Sectional Water Boilers

No. of Boilers	Square Inch Steam	Diameter of Boiler Inches	No. of Sections	Grate Area Sq. Ft.	Average Heating Surface Sq. Ft.	Size Fire-box Inches	Outside Diameter
1-20-W	1400	17½	3	2.34	23.35	13½x17½	21
6-20-W	1750	23½	6	4.05	51.34	19½x23½	27½
7-20-W	2000	29½	7	4.80	67.32	25½x29½	33½

Height to top of boiler, 34 inches. Width of boiler, 28 inches.
Size of steam pipe, 10 inches.
Add 12 inches to height to allow for nipple head.
Arranged for pipe tap for heating water for domestic purposes.
Additional connections, pages 32 and 33.
Covering, page 40.
Assembling Chart, see page 31.

No. 25-6-S

Twenty-five Series Sectional Steam Boilers

No. of Boiler	Rating See Note	Height of Boiler Inches	No. of Sections	Grate Area Sq. Ft.	Average Heating Surface Sq. Ft.	Size Firebox Inches	Outlet Inches
25-4-S	1351	37	4	4.95	67.32	20x33	2-4
25-6-S	1625	40	6	6.93	77.64	20x40	3/4
25-7-S	1971	43	7	7.92	93.52	20x47	3/4
25-8-S	2237	46	8	8.91	10.42	20x54	3/4

Height to top of outlet, 33¼ inches. Width of boiler, 30½ inches.
Fire tender type, 32 inches. Height of water line, 40 inches.
TABLE 18 Outlet to apply to allow for smokestack.
Do not push fire too far into sections. Correct fuel size to realize where
Average for pipe size for heating water for domestic purposes.
Additional measurements, pages 41 and 42.
Covering, page 42.
Assembling Chart, see page 37.

No. 6-25-W

Twenty-five Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Sects.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
5-25-W	2250	33	5	4.93	6.13	28x33	2-4
6-25-W	2750	40	6	6.11	7.68	28x40	2-4
7-25-W	3250	47	7	7.27	9.18	28x47	3-4
8-25-W	3750	54	8	8.43	10.65	28x54	3-4

Height to top of outlet, 37¼ inches. Width of boiler, forty inches.
Size of smoke pipe, 12 inches.
†Add 14 inches to length to allow for smokehood.
Arranged for pipe coil for heating water for domestic purposes.
Additional measurements, pages 32 and 33.
Covering, page 41.
Assembling chart, see page 31.

No. 31-6-S

Thirty-one Series Sectional Steam Boilers

No. of Boiler	Rating — Sq. Ft.	Length of Boiler, Inches	No. of Sections	Grate Area, Sq. Ft.	Average Firepot Sq. Ft.	Size Pyramids Over, Inches	Outlet, Inches
31-3-S	1875	19½	3	8 33	12 67	9½x44½	4
31-4-S	2500	27	4	11 11	16 89	9½x60½	4½
31-5-S	3125	34½	5	13 89	21 11	9½x77½	4½
31-6-S	3750	42	6	16 67	25 33	9½x94½	4½

Height to water line, 24 inches. Width of boiler, 30 inches.

Height of boiler over all, 34 inches. Size of smoke pipe, 12 inches.

Refer to table for weight of boiler for specification.

Be sure to read these sections on piping diagrams. Connect exactly as shown, as proper location of these outlets is vital for good results under requirements of load.

Additional accessories, page 10 to 41.

Connections, page 42.

Dimensional sheet, see page 43.

No. 6-31-W

Thirty-one Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Sects	Grate Area Sq. Ft	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6-31-W	4100	44½	6	8.35	12.62	33½x42½	2-5
7-31-W	4800	52	7	10.24	15.12	33½x49½	3-5
8-31-W	5500	59½	8	11.95	17.62	33½x56½	3-5
9-31-W	6200	67	9	13.62	20.33	33½x63½	3-5

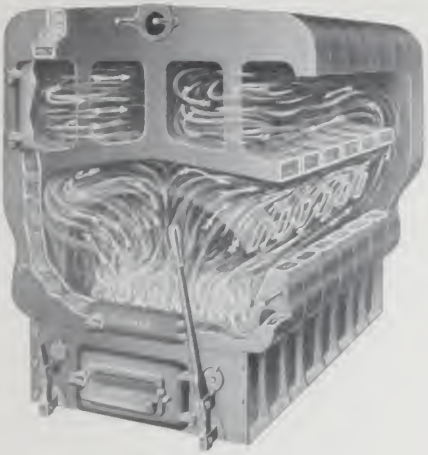
Height to top of jacket, 61 inches. Width of boiler, 30 inches.
Size of smoke pipe, 15 inches.
†Add 13 inches to length of boiler for smokehood.
Additional measurements, pages 32 and 33.
Covering, page 41.
Assembling chart, see page 31

No. 36-6-5

Thirty-six Series Sectional Steam Boilers

No. of Sections	Rating Sq. Ft. Steam	Overall Length of Boiler Inches	No. of Tubes	Grate Area Sq. Ft.	Average Heating Surface Sq. Ft.	Size Flue Outlet Inside Diameter	Ashpit Depth
3	600	46	3	11.25	45.00	8 inches	7
4	800	58	4	15.00	60.00	8 inches	7
5	1000	70	5	18.75	75.00	8 inches	7
6	1200	82	6	22.50	90.00	8 inches	7
7	1400	94	7	26.25	105.00	8 inches	7
8	1600	106	8	30.00	120.00	8 inches	7

Weight of base (2 sections) 725 pounds. Weight of header 38 pounds.
Weight of each extra section 275 pounds. Size of ashpit door 10 inches square.
Height of boiler to center of steam outlet 30 inches.
Size and kind of trimmings required, see page [illegible].
Number of tubes required in each section, see page [illegible]. Connect feed pipe to front header of boiler, see page [illegible]. Water line should be carried at least [illegible] inches above top of boiler. Where [illegible] is required for each section for heating water for domestic purposes, [illegible] should be connected, see page [illegible].
Connecting pipe to [illegible].
Recommended [illegible] sizes of [illegible].



No. 8-36-W
(Sectional View)

Thirty-six Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6-36-W	5800	49	6	11.30	14.69	41½x47½	2-5
7-36-W	6925	57½	7	13.75	17.61	41½x56	3-5
8-36-W	8050	66	8	16.00	20.54	41½x64½	3-5
9-36-W	9175	74½	9	18.25	23.46	41½x73	3-5
10-36-W	10300	83	10	20.50	26.38	41½x81	3-5

Height to top of outlet, 70 inches. Width of boiler, 38 inches.
Size of smoke pipe, 16 inches.
†Add 14 inches to length to allow for smokehood.
Arranged for pipe coil for heating water for domestic purposes.
Additional measurements, pages 32 and 38.
Covering, page 41.
Assembling chart, see page 31

No. 48-S-9

Forty-eight Series Sectional Steam Boilers

No. of Boiler	Rating Sq. Ft.	Diameter of Boiler Inches	No. of Sections	Grate Area Sq. Ft.	Approx. Weight Empty Lbs.	Size Required for Boiler Inches	Combustion Chamber
48-S-3	1000	48	3	10.5	2,100	144 x 72	9-6
48-S-4	1300	48	4	13.5	2,400	168 x 72	9-6
48-S-5	1600	48	5	16.5	2,700	192 x 72	9-6
48-S-6	1900	48	6	19.5	3,000	216 x 72	9-6
48-S-7	2200	48	7	22.5	3,300	240 x 72	9-6
48-S-8	2500	48	8	25.5	3,600	264 x 72	9-6
48-S-9	2800	48	9	28.5	3,900	288 x 72	9-6
48-S-10	3100	48	10	31.5	4,200	312 x 72	9-6

Boilers built up to and including 48-S-6 sections, 48 inches in diameter, are shipped as whole boilers, all others in sections. Boiler sections given, 48 inches.

The new Cast Iron sections of Novus Boilers. Connected 1-1/2 inch to provide boiler capacity of 2500 square feet and upwards, and connected 2 inch for capacities of 3000 square feet and upwards. Other connections are provided for the attachment of Steam Gauge, Safety Valve, Water Column, Blow-off Valve, Feed Valve, etc., as required.

Arrangement for Water Line Protector (see Supplementary Equipment).

Front Extension for Smoke Box (see page 12).

Rear Extension for Smoke Box (see page 12).

Combustion Chamber Extension (page 9 to page 12).

Connecting Flange (page 8).

Fire Doors, Ash Pit and Frame (page 12).

Smoke Outlet, Front (see page 12).

No. 8-48-W

Forty-eight Series Sectional Water Boilers

No. of Boiler	Rating See Note	††Length of Boiler Inches	†No. of Sec.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6–48–W	10000	59¼	6	18 23	22 50	54x 57½	2–6
7–48–W	11950	69¾	7	21 78	26 87	54x 68	2–6
8–48–W	13900	80¼	8	25 33	31 25	54x 78½	3–6
9–48–W	15850	90¾	9	28 87	35 62	54x 89	3–6
10–48–W	17800	101¼	10	32 48	40 00	54x 99½	3–6
11–48–W	19750	111¾	11	37 97	44 38	54x110	4–6

Height to top of outlet, 80 inches. Width of boiler, 67 inches. Size smoke pipe, 20 inches.

Arranged for pipe coil for heating water for domestic purposes.

††Add 20 inches to length to allow for smokehood.

†Sections are in halves.

Additional measurements, pages 32 and 34.
Covering, page 41.
See page 30 for information on piping.
Assembling chart, see page 31.

Forty-eight Inch Sectional Boiler

FOR HEAVY DUTY

REAR VIEW
With Three-Half-Sections Removed

REAR VIEW
Showing how Rear Sections Connect with the Front Section

Forty-eight Inch Sectional Boiler

FOR HEAVY DUTY

The National Forty-eight inch Sectional Boiler is a very efficient, economical and durable boiler for heavy duty.

This boiler has the double section, a feature that makes it easier to handle and erect.

Sections are connected at top with heavy six-inch push nipples and at the bottom with heavy four-inch push nipples.

Pipe coils for heating water for domestic purposes may be inserted if necessary.

The grate is of the flat-surfaced grill pattern, adapted to the use of any kind of fuel. It is arranged with two shakers, thus permitting of operating either the front or back half of grate.

Sectional Boiler Assembling Chart

F—Front Section; T—Tapped Section; N—Next to Back Tapped Section; M—Next to Back Center Section; C—Center Section; B—Back Section

20-Inch	F T C N B	5 Sec. 25-Inch	F T C N B
20-Inch	F T C C N B	6 Sec. 25-Inch	F T C C N B
20-Inch	F T C T C N B	7 Sec. 25-Inch	F T C T C N B
		8 Sec. 25-Inch	F T C T C C N B
31-Inch	F T C C N B	6 Sec. 36-Inch	F T C C N B
31-Inch	F T C T C N B	7 Sec. 36-Inch	F T C T C N B
31-Inch	F T C T C C N B	8 Sec. 36-Inch	F T C T C C N B
31-Inch	F T C C T C C N B	9 Sec. 36-Inch	F T C C T C C N B
		10 Sec. 36-Inch	F C T C C T C C N B

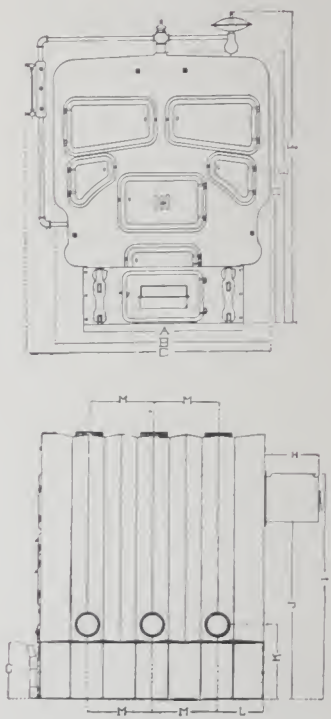
Left Hand	48-Inch	Right Hand
B N C C T F	6 Sec.	F C C M B
B N C C C T F	7 Sec.	F C C C C M B
B N C C C C T F	8 Sec.	F C C T C C M B
B N C C C C C T F	9 Sec.	F C C T C C C M B
B N C C C C C C T F	10 Sec.	F C C C T C C C M B
B N C C C C C C C T F	11 Sec.	F C C T C C T C C M B
B N C C C C C C C C T F	12 Sec.	F C C T C C C T C C M B

Note:—"N"—Tapping on the 25-inch, 31-inch and 36-inch is on the right-hand side facing Boiler.

"N"—Tapping on 48-inch (supply tapping on top of boiler) is on the left-hand side facing Boiler.

"N"—Tapping on the 20-inch and "T" on all sizes; can be placed on either side.

Measurements



On the opposite page is shown a table giving all measurements as applying to the illustrations. The outline used shows the measurements of both the Steam and Water types.

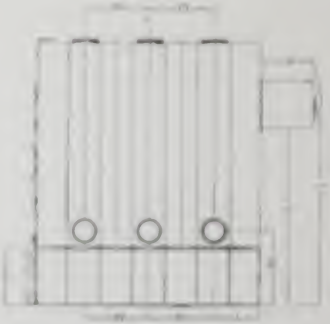
Measurements

The following table gives all the measurements in inches on Novus Steam and Hot-Water Sectional Boilers.

STEAM AND WATER

	20 Inches	28 Inches	31 Inches	36 Inches	40 Inches
A	22¾	27¾	34	41½	54
B	28	36½	36	50	67
C	37½	44	53¼	65	78
D	47	49	52	60¼	68
E	54	57¼	61	70	80
F	65¾	74½	76¼	90½	103½
G	12	12⅝	12⅞	15	15
H	14	14	14	14	20
I	48½	49¾	53	68¼	87¾
J	41	36	41⅝	46¾	60¼
K	14½	14¾	17	18⅞	
L	8	9⅜	10¾	13¾	15
M	11¾	14	13⅝	17	21
Size of Fire Door	8½x13	10x15¾	11x18	13x20	16½x17

Measurements



On the opposite page is shown a table giving all measurements as applying to the illustrations. The outline used shows the measurements of both the Steam and Water types.

Measurements

The following table gives all the measurements in inches on Novus Steam and Hot-Water Sectional Boilers.

STEAM AND WATER

	20 Inches	25 Inches	31 Inches	36 Inches	48 Inches
A	22¾	27¼	34	41½	54
B	28	36½	50	56	67
C	37½	44	58¼	65	76
D	47	49	52	60¼	68
E	54	57¼	61	70	80
F	65¾	74½	76½	90½	101½
G	12	12⅞	12⅞	15	15
H	14	14	14	14	20
I	48½	49¼	53	58¾	67¾
J	41	36	41½	46¾	50¼
K	14½	16 3/16	17	18 3/16	..
L	8	9⅜	10⅝	11½	15
M	11¼	14	15⅛	17	21
Size of Fire Door	8½x13	10x15⅞	11x18	13x20	10½x17

No. 1 Hot Water Supply Boiler

No. 10-B

No.	Height Inches	Size Top Inches	Diam. Base Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons
1	24½	16x25	17	10	1¼	6	90

No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons
10-B	30	18	10	1¼	6	120

Nos. 1 and 10-B Heaters have slide-center grates, base and legs.

No fire tools are supplied with these heaters.

When Hot Water Supply Boilers are subjected to some unusual pressure, as is the case when tanks are connected direct to City Pumping Station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a Water-Pressure Reducing Valve and Relief Valve.

No. 12-B

No. 167-A

No.	Height Inches	Diam. Inside Inches	Diam. Outside Inches	Size Nipples	Size Supply Pipe Inches	Tank Capacity Gallons
12-B	29½	14	15	1½	1	30
14-B	33½	16	17	1½	1	40

No.	Height Inches	Diam. Inside Inches	Diam. Outside Inches	No. and Size Grates	Size Nipples Pipe Inches	Tank Capacity Gallons
98	27½	12	13	1/8	1	40
167-A	32½	14	15	1/8	1	50
112	38	17½	18	1/10	1½	80
114	42	20½	21	1/12	1½	100
116	46½	23	24	1/14	1½	125

The No. 167-A National Sunny Hot Water Supply Boiler illustrated has an extra deep firepot. Ashes and unburned coal fall into the pit, and a damper in the ashpit is connected to the water chamber at the side, which will effectually check the burning surface.

Nos. 12-B and 14-B have rocking and dumping type of grates.

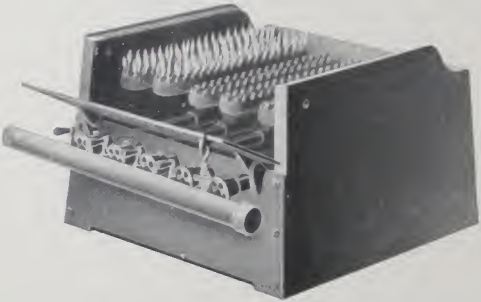
Nos. 98 and 167-A Boilers have rotary and water grates and the shaft lever and shake-down plate.

Nos. 112, 114 and 116 have rocking and dumping grates.

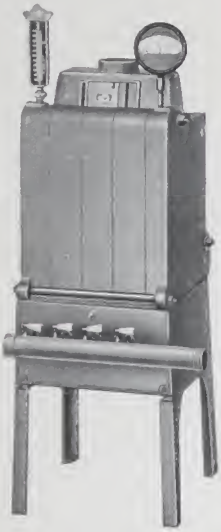
A coupler door is provided in the firepot, thus avoiding the necessity of removing the grate to clean the flue.

When not used to heat the tank, the flue damper is removed from above back end is used.

Interior View Radium Boiler



Radium Boiler Base with Burners Assembled



Gas Water Boilers

SERIES 1

No.	Rating	Supply Tapping Inches	Return Tapping Inches	Smoke Connec. Inches	Size of Base Inches	Burner Manifold Inches
41	400	2–2	2–2	4	12x14¾	1¼
51	500	2–2	2–2	4	15x14¾	1¼
61	600	2–2	2–2	4	18x14¾	1¼
71	700	2–2	2–2	4	21x14¾	1¼

Size gas supply, 1 inch. Total height of boiler, 43½ inches. Height to center of supply tapping, 37¾ inches. Height to center of return tapping, 22⅝ inches.

No trimmings furnished with water boilers.

Covering, page 41.

Gas Steam Boilers

SERIES 2

No.	Rating	Supply Taps. Inches	Return Taps. Inches	Size Smoke-hood Inches	Size Base Inches	Burner Manifold Inches
4	450	2–3	2–3	1–5	18x25	1¼
5	575	2–3	2–3	1–7	22x25	1¼
6	700	2–3	2–3	1–7	26x25	1½
7	825	2–3	2–3	1–7	30x25	1½
8	950	2–3	2–3	1–7	34x25	2
9	1075	2–3	2–3	2–7	38x25	2
10	1200	2–3	2–3	2–7	42x25	2
11	1325	2–3	2–3	2–7	46x25	2
12	1450	2–3	2–3	2–7	50x25	2
13	1575	2–3	2–3	2–7	54x25	2
14	1700	2–3	2–3	2–7	58x25	2
15	1825	2–3	2–3	2–7	62x25	2
16	1950	2–3	2–3	2–7	66x25	2½
17	2075	2–3	2–3	2–7	70x25	2½
18	2200	2–3	2–3	2–7	74x25	2½
19	2325	2–3	2–3	2–7	78x25	2½
20	2450	2–3	2–3	2–7	82x25	2½

Height of water line, 36 inches. Height to top of supply tapping, 57 inches. Height to center of return tapping, 16½ inches. Size gas supply 4 to 8 sec., 1 inch; 9 to 12 sec., 1¼ inch; 13 to 20 sec., 1½ inches.

All steam boilers furnished with steam header and a complete set of trimmings. Covering, page 41.

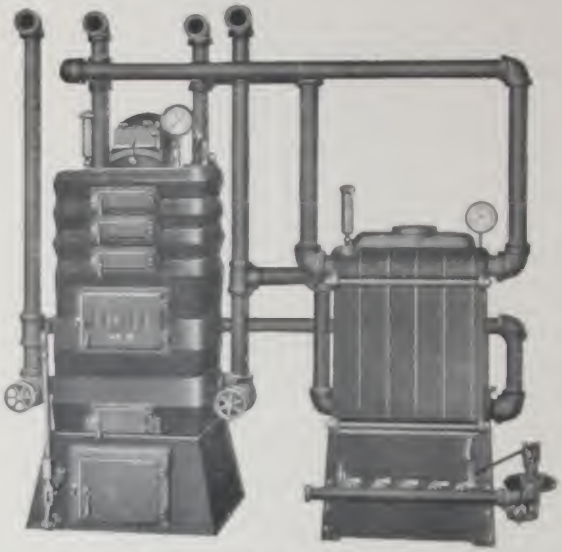
Gas Water Boilers

SERIES 2

No.	Rating	Supply Taps. Inches	Return Taps. Inches	Size Smoke-hood Inches	Size of Base Inches	Burner Manifold Inches
4	750	2–3	2–3	1–5	18x25	1¼
5	950	2–3	2–3	1–7	22x25	1¼
6	1150	2–3	2–3	1–7	26x25	1½
7	1350	2–3	2–3	1–7	30x25	1½
8	1550	2–3	2–3	1–7	34x25	2
9	1750	2–3	2–3	2–7	38x25	2
10	1950	2–3	2–3	2–7	42x25	2
11	2150	2–3	2–3	2–7	46x25	2
12	2350	2–3	2–3	2–7	50x25	2
13	2550	2–3	2–3	2–7	54x25	2
14	2750	2–3	2–3	2–7	58x25	2
15	2950	2–3	2–3	2–7	62x25	2
16	3150	3–3	2–3	2–7	66x25	2½
17	3350	3–3	2–3	2–7	70x25	2½
18	3550	3–3	2–3	3–7	74x25	2½
19	3750	3–3	2–3	3–7	78x25	2½
20	3950	3–3	2–3	3–7	82x25	2½

Height to center of supply tapping, 40¾ inches. Height to center of return tapping, 16½ inches. Distance from center of supply to center of return tapping, 24¼ inches. Height of boiler, 46 inches. Size gas supply 4 to 8 sec., 1 inch; 9 to 12 sec., 1¼ inch; 13 to 20 sec., 1½ inch.

Covering, page 41.



Combination Gas and Coal Heating

Gas and coal boilers can be conveniently yoked together and operated either separately or as one unit for heating purposes. By such an arrangement both boilers can be utilized in extremely cold weather, or the coal boiler is ready for instant service in the event of any shortage in gas or reduction in gas pressure.

Sylph-Oil Regulator

Regulates the supply of Preheated air for Up-Draft Smokeless Boilers. Can be regulated to close air intake in from one minute to any hours time required. Increases the efficiency and economy of Up-Draft Smokeless Boilers.

Boiler Covering

The amount of Asbestos Cement necessary to cover National Boilers 1¼ inches thick is as follows:

NOVUS UPRIGHT BOILERS

Steam or Water

30	150 lbs.	50	200 lbs.
31	175 lbs.	51	250 lbs.
32	200 lbs.	52	275 lbs.
40	175 lbs.	60	250 lbs.
41	200 lbs.	61	300 lbs.
42	225 lbs.	62	325 lbs.

ACME ROUND BOILERS "P" SERIES

1017 or 1117	75 lbs.	1022 or 1122	125 lbs.
2017 or 2117	100 lbs.	2022 or 2122	150 lbs.
3017 or 3117	135 lbs.	3022 or 3122	175 lbs.
1019 or 1119	100 lbs.	1025 or 1125	150 lbs.
2019 or 2119	125 lbs.	2025 or 2125	175 lbs.
3019 or 3119	150 lbs.	3025 or 3125	200 lbs.
		4025 or 4127	225 lbs.

SECTIONAL AND SMOKELESS

Steam or Water

20 Series, 5 Section	240 lbs.	36 Series, 6 Section	650 lbs.
20 Series, 6 Section	280 lbs.	36 Series, 7 Section	735 lbs.
20 Series, 7 Section	320 lbs.	36 Series, 8 Section	800 lbs.
		36 Series, 9 Section	875 lbs.
25 Series, 5 Section	350 lbs.	36 Series, 10 Section	950 lbs.
25 Series, 6 Section	400 lbs.	36 Series, 11 Section	1025 lbs.
25 Series, 7 Section	450 lbs.	36 Series, 12 Section	1100 lbs.
25 Series, 8 Section	500 lbs.	36 Series, 13 Section	1175 lbs.
25 Series, 9 Section	550 lbs.	36 Series, 14 Section	1250 lbs.
25 Series, 10 Section	600 lbs.	36 Series, 15 Section	1325 lbs.
25 Series, 11 Section	650 lbs.	36 Series, 16 Section	1400 lbs.
25 Series, 12 Section	700 lbs.		
		48 Series, 6 Section	850 lbs.
31 Series, 6 Section	535 lbs.	48 Series, 7 Section	950 lbs.
31 Series, 7 Section	600 lbs.	48 Series, 8 Section	1050 lbs.
31 Series, 8 Section	678 lbs.	48 Series, 9 Section	1150 lbs.
31 Series, 9 Section	780 lbs.	48 Series, 10 Section	1250 lbs.
31 Series, 10 Section	835 lbs.	48 Series, 11 Section	1350 lbs.
31 Series, 11 Section	900 lbs.	48 Series, 12 Section	1450 lbs.
31 Series, 12 Section	975 lbs.	48 Series, 13 Section	1550 lbs.
31 Series, 13 Section	1050 lbs.	48 Series, 14 Section	1650 lbs.
		48 Series, 15 Section	1750 lbs.
		48 Series, 16 Section	1850 lbs.

RADIUM BOILERS

Steam or Water

41	42 lbs.	10	168 lbs.
51	48 lbs.	11	180 lbs.
61	54 lbs.	12	192 lbs.
71	60 lbs.	13	204 lbs.
		14	216 lbs.
4	96 lbs.	15	228 lbs.
5	108 lbs.	16	240 lbs.
6	120 lbs.	17	252 lbs.
7	132 lbs.	18	264 lbs.
8	144 lbs.	19	276 lbs.
9	156 lbs.	20	288 lbs.

Three Column Pattern

Patents Applied For

AERO Three Column Radiators

SIZES AND RATINGS

No. of Sections	Length* 2½-in. per Sec.	Square Feet—Heating Surface			
		36-in. Height 4½ Sq. Ft. per Sec.	30-in. Height 3 Sq. Ft. per Sec.	26-in. Height 2½ Sq. Ft. per Sec.	20-in. Height 1¾ Sq. Ft. per Sec.
2	5	7½	6	5⅛	3½
3	7½	11	9	8	5¼
4	10	14⅝	12	10⅜	7
5	12½	18⅜	15	13⅛	8¾
6	15	22	18	16	10½
7	17½	25⅝	21	18⅝	12¼
8	20	29⅜	24	21⅛	14
9	22½	33	27	24	15¾
10	25	36⅝	30	26⅝	17½
11	27½	40⅜	33	29⅜	19¼
12	30	44	36	32	21
13	32½	47⅝	39	34⅝	22¾
14	35	51⅜	42	37⅜	24½
15	37½	55	45	40	26¼
16	40	58⅝	48	42⅝	28
17	42½	62⅜	51	45⅜	29¾
18	45	66	54	48	31½
19	47½	69⅝	57	50⅝	33¼
20	50	73⅜	60	53⅓	35
21	52½	77	63	56	36¾
22	55	80⅝	66	58⅝	38½
23	57½	84⅜	69	61⅓	40¼
24	60	88	72	64	42
25	62½	91⅝	75	66⅔	43¾
26	65	95⅜	78	69⅓	45½
27	67½	99	81	72	47¼
28	70	102⅝	84	74⅔	49
29	72½	106⅓	87	77⅓	50¾
30	75	110	90	80	52½
31	77½	113⅔	93	82⅔	54¼
32	80	117⅓	96	85⅓	56

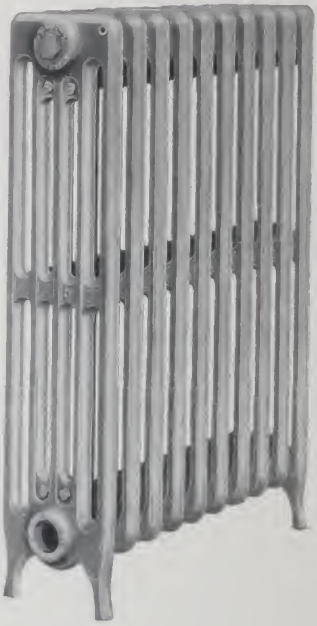
*Add 1½" to length for each bushing.
Width of feet, 5⅛ inches.
Width of section, 8⅛ inches.
Height from floor to center of tapping boss, both feed and return, for steam and water, 4⅛ inches.

Aero Three Column Radiators are tapped 1¼ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water. They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 4 inches from floor to center of tapping boss when ordered.

Five Column Pattern

Patents Applied For



AERO Five Column Radiators

SIZES AND RATINGS

No. of Sections	Length* 2½-in. per Sec.	Square Feet—Heating Surface			
		36-in. Height 5 Sq. Ft. per Sec.	30-in. Height 4 Sq. Ft. per Sec.	26-in. Height 3½ Sq. Ft. per Sec.	20-in. Height 3 Sq. Ft. per Sec.
2	5	10	8	7½	6
3	7⅝	15	12	11¼	9
4	10	20	16	15	12
5	12⅝	25	20	18¾	15
6	15	30	24	22½	18
7	17½	35	28	26¼	21
8	20	40	32	30	24
9	22½	45	36	33¾	27
10	25	50	40	37½	30
11	27½	55	44	41¼	33
12	30	60	48	45	36
13	32½	65	52	48¾	39
14	35	70	56	52½	42
15	37½	75	60	56¼	45
16	40	80	64	60	48
17	42½	85	68	63¾	51
18	45	90	72	67½	54
19	47½	95	76	71¼	57
20	50	100	80	75	60
21	52½	105	84	78¾	63
22	55	110	88	82½	66
23	57½	115	92	86¼	69
24	60	120	96	90	72
25	62½	125	100	93¾	75
26	65	130	104	97½	78
27	67½	135	108	101¼	81
28	70	140	112	105	84
29	72½	145	116	108¾	87
30	75	150	120	112½	90
31	77½	155	124	116¼	93
32	80	160	128	120	96

*Add ½ inch to length for each bushing.

Width of feet, 8⅜ inches.

Width of section, 8⅜ inches.

Height from floor to center of tapping boss, both feed and return for steam and water, 4½ inches.

Aero Five Column Radiators are tapped 1¼ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water. They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 6 inches from floor to center of tapping boss when ordered.

Seven Column Pattern

Patents Applied For

AERO Seven Column Radiators

SIZES AND RATINGS

No. of Sections	Square Feet—Heating Surface						
	Length 2½-in. per Sec.*	36-in. Height 7 Sq. Ft. per Sec.	30-in. Height 6⅓ Sq. Ft. per Sec.	26-in. Height 5⅛ Sq. Ft. per Sec.	20-in. Height 4⅓ Sq. Ft. per Sec.	16½-in. Height 3⅛ Sq. Ft. per Sec.	13½-in. Height 2⅝ Sq. Ft. per Sec.
2	5"	14	12⅔	10⅝	9	7⅛	6⅓
3	7½	21	19	15¾	13½	11¼	9⅞
4	10	28	25¼	21	18	15	13⅛
5	12½	35	31⅝	26½	22½	18¾	16¼
6	15	42	38	31½	27	22½	19⅝
7	17½	49	44⅓	36¾	31½	26¼	23⅛
8	20	56	50⅔	42	36	30	26⅜
9	22½	63	57	47¼	40½	33¾	29½
10	25	70	63⅓	52½	45	37½	32⅞
11	27½	77	69⅔	57¾	49½	41¼	36⅛
12	30	84	76	63	54	45	39
13	32½	91	82⅓	68¼	58½	48¾	42⅝
14	35	98	88⅔	73½	63	52½	45⅞
15	37½	105	95	78¾	67½	56¼	49⅛
16	40	112	101⅓	84	72	60	52
17	42½	119	107⅔	89¼	76½	63¾	55⅞
18	45	126	114	94½	81	67½	59⅛
19	47½	133	120⅔	99¾	85½	71¼	62⅜
20	50	140	126⅔	105	90	75	65
21	52½	147	133	110¼	94½	78¾	68⅞
22	55	154	139⅔	115½	99	82½	72⅛
23	57½	161	145⅔	120¾	103½	86¼	75½
24	60	168	152	126	108	90	78
25	62½	175	158⅔	131¼	112½	93¾	82⅛
26	65	182	164⅔	136½	117	97½	84½
27	67½	189	171	141¾	121½	101¼	88⅝
28	70	196	177⅓	147	126	105	91
29	72½	203	183⅔	152¼	130½	108¾	95⅛
30	75	210	190	157½	135	112½	97½
31	77½	217	196⅔	162¾	139½	116¼	101⅝
32	80	224	202⅔	168	144	120	104

*Add ½ inch to length for each bushing.

Width of feet, 12 inches.

Width of section, 12 inches.

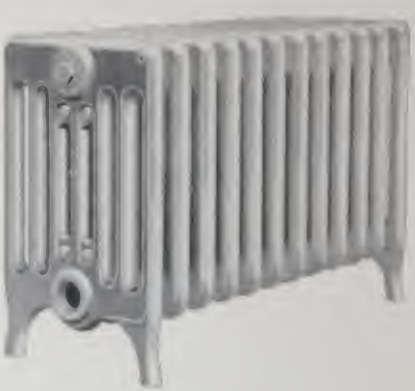
Height from floor to center of tapping boss, both feet and return, on 36", 30", 26" and 20" heights, 4½ inches; on 16½" and 13½" heights, 4 inches.

The 16½" and 13½" heights are made regularly with low legs.

When ordered they will be equipped with regular legs, which will increase their heights to 18" and 15" respectively, and the distance from floor to center of tapping boss to 4½ inches.

Aero Seven Column Radiators are tapped 1¼ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water. They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 6 inches from floor to center of tapping boss when ordered.

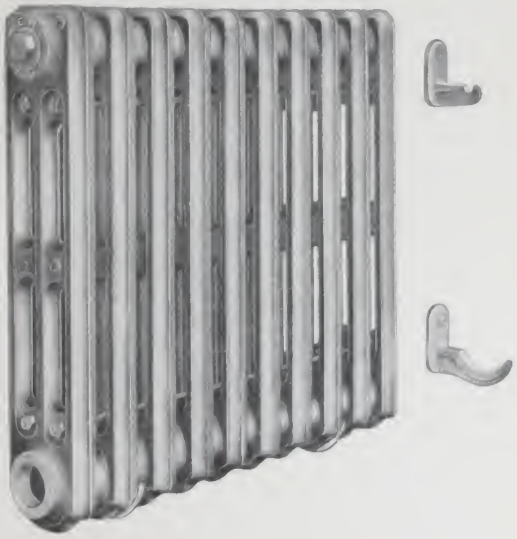


Aero Window Radiator

AERO Radiators are made in types and heights to suit every building requirement. In every pattern is found that beauty and refinement of proportion so essential to interior decoration.

The window seat has become as popular in the winter as the hammock in the summer. Instead of being shunned, it is now the center of interest in the modern home, for open cheer can be enjoyed in comfort.

Aero Window Radiators are made in the Seven Column pattern in 13½", 16½" and 20" heights. Either low or high feet are supplied.



Aero Legless Radiator

A BATHROOM, equally heated throughout, means undreamed of comfort in a well planned home. Unusual care is always exercised in its equipment.

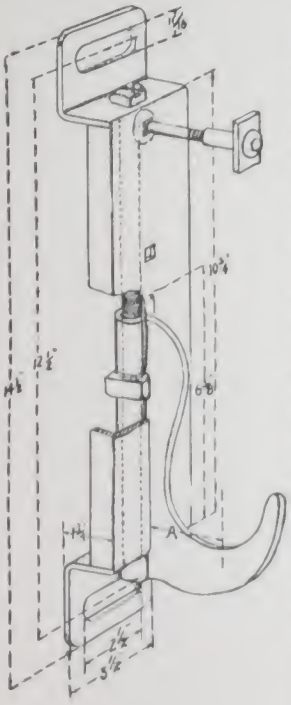
Aero Legless or side-wall radiators are particularly adapted to bathrooms. This slender, gracefully designed radiator, enameled to harmonize with the fixtures or color scheme desired, is not only sanitary but lends that degree of elegance which is a source of delight to the owner.

All surfaces are readily accessible for cleaning and it can be kept as immaculate as the bathroom fixtures.

Aero Legless Radiators
Concealed Brackets

Top and Bottom Tappings

Aero Adjustable Radiator Hanger



With the increasing popularity of the legless type radiator has come a need for an easily installed, effective support. This need has been filled by the Aero pressed steel adjustable radiator hanger.

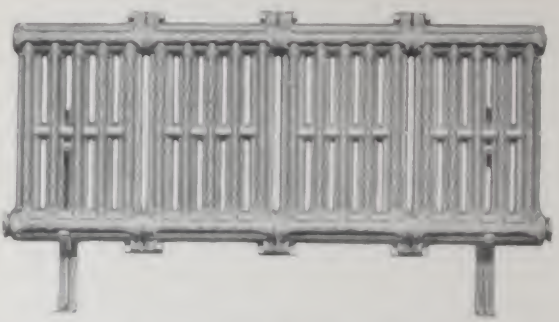
Anchor bolts furnished with the hanger, are all that is required for securing to the wall. Bushing strips are unnecessary, as the radiator is held at a sufficient distance from the wall to permit a free circulation of air. The device is adjustable 2½ inches horizontally, and 5 inches vertically, which eliminates the necessity for minutely exact measurements in installing. The parts are made of pressed steel.

These hangers are strong, simple, easy to install, and thoroughly effective.

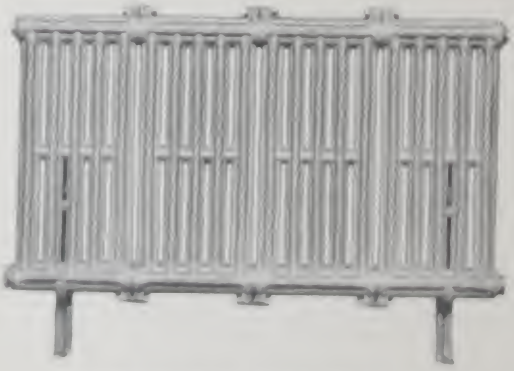
"A" MEASUREMENTS

3 column	2⅞"
5 column	4⅛"
7 column	6"

For Steam or Water



Four 20-inch Sections, National Wall Radiator



Four 38-inch Sections, National Wall Radiator

NOTE—The NOVUS WALL RADIATOR is particularly adapted for heating shops and is extensively used for this purpose. Owing to its compact construction and its push nipple joint which permits of increasing or decreasing size of radiators on the job, it has become very popular among steamfitters.

Sizes Novus Wall Radiator

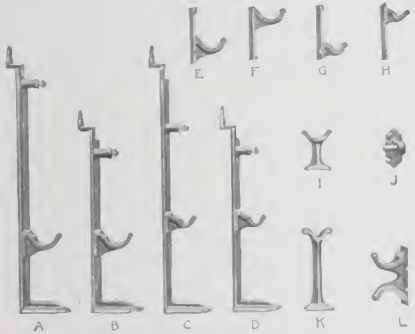
High Inches	Wide Inches	Height Including Lugs, Inches	Surface Sq. Ft.
36	12	38	9
28	12	30	7
20	12	22	5

Distance from center to center top and bottom tapping.

20″—17¼″ center to center
28″—25⅛″ center to center
36″—33″ center to center

Width of Sections . . . . . 3 inches
Distance from Wall to Center of Tapping Wall Brackets . . . . . 2⅞ inches
Pedestal Brackets . . . . . 3⅝ inches

Novus Wall Radiator Brackets and Supports



A and C Pedestal Supports are 26 inches high and B and D Pedestal Supports 20 inches high.

A and B both made to support radiator either 4, 6 or 8 inches from floor to center of opening. A for 28-inch and 36-inch sections only; B for 20-inch sections only.

C and D. These supports can only be used for single radiators with bars running horizontally and outlets on bottom side. Distance from floor to bottom of radiator, 8 inches.

E and F. Plain Wall Brackets. E used as bottom bracket. F used as top bracket.

G and H. Can only be used on single sections with bars running horizontally.

I. Small pedestal support. From floor to center of outlet, 4⅛ inches.

J. Top Bracket to fit into opening on the lug on end sections. Can also be used for bottom brackets on small radiators.

K. Pedestal Support can only be used for single sections with bars running horizontally, distance from floor to bottom of radiator, 7 inches.

L. Special Bracket to be used where one tier of sections is placed above the other.

Adjustable Wall Radiator Hangers

"A" Measurement
15/16 Inch

TOP HUNG

Type of Hanger for hanging single row of Wall Radiation from top

"A" Measurement
15/16 Inch

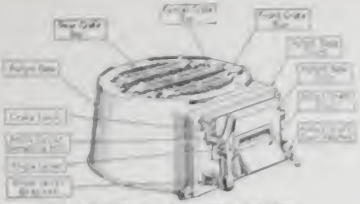
BOTTOM HUNG

Type of Hanger for hanging single and double rows of Wall Radiation from bottom

Name of Part	25"	31"	36"	48"
Front Section, Steam or Water	$54 00	$85 00	$100 00	$80 00*
Center Section, Steam or Water	54 00	90 00	114 00	87 00*
Tapped Section, Steam or Water	57 00	92 00	117 00	89 00*
Uptake Section Second from Back, Steam or Water			116 00	88 00*
Uptake Section Next to Back (Tapped) Steam or Water	56 00	87 00	116 00	88 00*
Uptake Section Next to Back (Plain) Steam or Water				88 00*
Back Section (Plain) Steam or Water	62 00	92 00	125 00	
Back Section (Tapped) Steam or Water				109 00*
Base Front Panel	6 75	7 50	9 50	19 50
Base Back Panel	5 00	7 50	11 00	13 75
Base Side Panel, 5 Section	9 00			
Base Side Panel, 6 Section			16 00	19 50
Base Side Panel, 7 Section			19 00	24 00
Base Side Panel, 8 Section	15 75		22 00	28 50
Base Side Panel, 9 Section		18 50	25 00	33 00
Base Side Panel, 10 Section		21 00		
Base Extension, 1 Section R	2 75	3 00	4 25	5 00
Base Extension, 1 Section L	2 75	3 00	4 25	5 00
Base Extension, 2 Section R	4 50	5 00	7 50	9 00
Base Extension, 2 Section L	4 50	5 00	7 50	9 00
Base Extension, 3 Section R	6 00	10 00	10 00	13 00
Base Extension, 3 Section L	7 00	12 75	10 00	13 00
Grate Bar, Regular or Pea Coal	4 50	6 75	9 75	18 25
Grate Con. Bar, 9 Section (Wrot Iron)	1 75	2 00	2 25	2 50
Grate Con. Bar, 10 Section (Wrot Iron)	2 00	2 25	2 50	3 00
Grate Con. Bar, 11 Section (Wrot Iron)	2 25	2 50	2 75	3 50
Grate Con. Bar, 12 Section (Wrot Iron)	2 50	3 00	3 25	4 00
Grate Con. Bar, 13 Section (Wrot Iron)		3 25	3 50	4 25
Grate Con. Bar, 14 Section (Wrot Iron)			3 50	4 25
Grate Con. Bar, 15 Section (Wrot Iron)			4 00	4 75
Grate Con. Bar, 16 Section (Wrot Iron)			4 00	4 75
Grate Con. Bar Guide Post		30	50	
Grate Lock	15	15	25	25
Angle Lever Link	15	15	15	15
Angle Lever	75	75	1 00	1 00
Shaker Handle	75	75	1 00	1 25
Fire Door Frame	2 50	2 50	3 25	2 50
Fire Door	2 25	2 50	3 75	3 00
Fire Door Liner	1 50	1 50	2 00	1 75
Fire Door Slide	25	25	30	25
Fire Door Slide Knob	10	10	10	10
Ashpit Door	1 50	2 00	3 00	3 00
Ashpit Draft Door (Front)	75	75	75	75
Base Side Draft Door	1 50	1 50	2 50	2 50
Draft Door Ratchets, each	15	15	15	15
Base Side Draft Door Lugs, each	15	15	15	15
Rear Base Cleanout Door	2 50	250	250	2 50
Rear Base Cleanout Door Liner	1 75	1 75	1 75	1 75
Base Side Cleanout Door Frame	75	75	75	75
Base Side Cleanout Door	75	75	75	75
Cleanout Door Frame, Upper	2 25	2 50	3 00	4 50
Cleanout Door, Upper	1 75	2 50	3 75	6 00
Cleanout Door Liner, Upper	1 25	1 25	1 75	3 25
Cleanout Door Frame, Lower		1 00	1 50	2 75
Cleanout Door, Lower		1 00	1 00	2 00

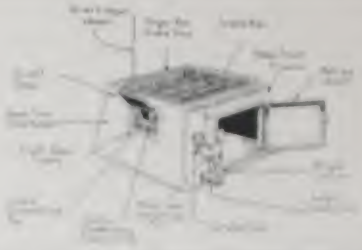
*48 Series Sections list price for each half.

Name of Part	22"	24"	26"	28"
Cylinder Head Studs	8	8	8	8
Cylinder Head Nuts				
Cylinder Head Cover				
Cylinder Head Cover Gasket				
Cylinder Head Cover Screws				
Cylinder Head Cover Nuts				
Cylinder Head Cover Washers				
Cylinder Head Cover Studs				
Cylinder Head Cover Stud Nuts				
Cylinder Head Cover Stud Washers



Name of Part	17"	19"	21"	23"
Firepot Section (open)	$14.00	$14.00	$17.00	$20.00
Center Section (feed door finish)	13.00	13.00	16.00	20.00
*Center Section (ascot above finish)	11.00	12.00	15.00	19.00
Center Section (feed door finish)	11.00	12.00	15.00	19.00
Shaker Frame	10.00	10.00	14.00	14.00
Water Frame	13.00	16.00	20.00	25.00
Base Complete	21.00	25.00	29.00	33.00
Base Casting only	12.00	15.00	18.00	18.00
Base Pivot Frame	2.00	2.00	2.00	2.00
Ashpit Door	1.35	1.35	1.50	1.50
Ashpit Draft Door	.90	.90	.90	.90
Ashpit Draft Door Rod(s)	.15	.15	.15	.15
Angle Lever	.60	.60	.60	.60
Angle Lever Link	.20	.20	.20	.20
Shaker Handle	.80	.80	.80	.80
Front Grate Bar	1.90	1.27	1.47	1.75
Center Grate Bar	1.50	1.75		
Front Center Grate Bar			1.11	.55
Rear Center Grate Bar			1.11	.55
Back Grate Bar	1.00	1.25	1.47	1.75
Grate Connecting Bar	.60	.70	.98	.90
Angle Lever Connecting Arm	.40	.40	.40	.50
Grate Lock	.11	.15	.11	.11
Fire Door	1.25	1.35	1.50	1.50
Fire Door Frame	1.50	1.50	1.75	1.75
Fire Door Liner	.60	.60	.60	.60
Fire Door Side	.20	.25	.25	.25
Fire Door Side Knob	.10	.10	.10	.10
Clean-out Door	.80	.80	.90	.90
Top Clean-out Door Plate (wafer)	.70	.90	.70	.90
Clean-out Door Frame	.70	.90	.90	.90
Cleaner Door	.60	.70	.80	.90
Cleaner Door Frame	.40	.40	.90	.90
Outside Cover for Coil Opening	.35	.35	.35	.35
Inside Cover for Coil Opening	.70	.70	.70	.70
Smoke Elbow Casting only	1.50	1.75	1.75	2.00
Smoke Elbow Door Damper	.75	.90	.80	.90
Smoke Elbow Door Damper Handle	.15	.15	.15	.15
Check Draft Door	.90	.90	.90	.90
Check Draft Door Frame	.80	.80	.80	.75
Check Draft Door Retainer	.15	.15	.15	.15
Nipples, each	.40	.50	.50	.60
Fire Brush Handle	.75	.75	.75	.75
Poker	.75	.75	.75	.75
Screen	.40	.40	.40	.40
Section Rods (No. 1 Section)	.75	.75	.75	.75
Section Rods (No. 2 Section)	1.00	1.00	1.00	1.00
Section Rods (No. 3 Section)	1.25	1.25	1.25	1.25
Section Rods (No. 4 Section)				1.75

*The ascot Center Section is used in conjunction with feed door finish to form 23" size. †Everything below the firepot when Boiler is completely assembled.



Name of Part	Number of Boilers			
	No. 10 Size	No. 11 Size	No. 12 Size	No. 13 Size
Base, cast iron, complete with handle				
Base, Steel, Pressed, complete with handle				
Casing, Lower, Front Section				
Casing, Lower, Back				
Casing, Lower, Side				
Casing, Upper				
Casing, Top				
Casing, Upper, Front, Section, Complete				
Casing, Upper, Back, Section				
Casing, Upper, Side				
Casing, Upper, Intermediate Side				
Casing, Upper, Intermediate Side, Short				
Casing, Upper, Intermediate Side, Long				
Casing, Upper, Cover, Lift				
Casing, Upper, Cover, Fixed				
Casing, Upper, Intermediate, Complete				
Casing, Upper, Intermediate, Complete, with Fixed Cover				
Casing, Upper, Intermediate, Complete, with Lift Cover				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short				
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Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
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Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
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Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
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Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
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Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
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Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short				
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Casing, Upper, Intermediate, Complete, with Fixed Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Short, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Fixed Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long				
Casing, Upper, Intermediate, Complete, with Lift Cover, Long, for Low Water Attachment, Special, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long, Short, Long

Name of Part	20" ‡	25" ○	31"	36"	48"
Front Section, Steam or Water	$28 00	$54 00	$85 00	$100 00	$80 00*
Center Section, Steam or Water	24 00	54 00	90 00	114 00	87 00*
Tapped Section, Steam or Water	26 00	57 00	92 00	117 00	89 00*
Next to Back Section, Steam or Water	25 00	56 00	87 00	116 00	88 00*
Back Section, Steam or Water (Plain)	36 00	62 00	92 00	125 00	
Back Section, Steam or Water (Tapped)					109 00*
Base Front Panel	2 25	6 75	7 50	9 50	19 50
Base Back Panel	3 75	6 25	8 00	11 00	20 25
Base Side Panel, 5 Section	5 50	9 00	9 50	13 00	15 00
Base Side Panel, 6 Section	6 75	11 25	11 75	16 00	19 50
Base Side Panel, 7 Section	8 00	13 50	14 00	19 00	24 00
Base Side Panel, 8 Section		15 75	16 25	22 00	28 50
Base Side Panel, 9 Section			18 50	25 00	33 00
Base Extension, 1 Section, R. or L	1 75	2 75	3 00	4 25	5 00
Base Extension, 2 Section, R. or L		4 50	5 00	7 50	9 00
Grate Bar, Regular or Pea Coal	2 50	4 50	6 75	9 75	18 25
Grate Con. Bar, 5 Section (Wrot Iron)	75	1 50	1 75	1 75	2 25
Grate Con. Bar, 6 Section (Wrot Iron)	75	1 75	2 00	2 00	2 50
Grate Con. Bar, 7 Section (Wrot Iron)	1 00	2 00	2 25	2 50	3 00
Grate Con. Bar, 8 Section (Wrot Iron)		2 25	2 50	2 75	3 50
Grate Con. Bar, 9 Section (Wrot Iron)			3 00	3 25	4 00
Grate Con. Bar, 10 Section (Wrot Iron)				3 50	4 25
Grate Con. Bar, 11 Section (Wrot Iron)					4 75
Grate Connecting Bar Guide Post			30	50	
Grate Lock	15	15	15	25	25
Angle Lever Link	15	15	15	15	15
Angle Lever	50	75	75	1 00	1 00
Shaker Handle	75	75	75	1 00	1 25
Fire Door Frame	1 50	2 50	2 50	3 25	2 50
Fire Door	2 00	2 25	2 50	3 75	3 00
Fire Door Liner	50	1 50	1 50	2 00	1 75
Fire Door Slide and Knob	25	25	25	30	25
Ashpit Door	1 50	1 50	2 00	3 00	3 00
Ashpit Draft Door Frame	30				
Ashpit Draft Door	30	75	75	75	75
Ashpit Door Slide	15				
Ashpit Draft Door Ratchet	15	15	15	15	15
Cleanout Door Frame, Upper	75	2 25	2 50	3 00	4 50
Cleanout Door, Upper	1 00	1 75	2 50	3 75	6 00
Cleanout Door Liner, Upper	50	1 25	1 25	1 75	3 25
Cleanout Door Frame, Lower		30	1 00	1 50	2 75
Cleanout Door, Lower		30	1 00	1 00	2 00
Clinker Door Frame	1 25	1 25	75	2 00	2 50
Clinker Door	75	75	75	1 50	1 75
Clinker Door Liner	50	50	50	75	1 50
Outside Coil Opening Cover	25	25	25	25	50
Inside Coil Opening Cover	15	15	15	15	15
Smokehood	4 75	6 75	7 00	12 25	15 00
Smokehood Turn Damper	75	1 00	1 50	2 50	2 75
Smokehood Turn Damper Handle	15				
Smokehood Turn Damper Ratchet	15				
Slotted Damper Trunnion		25	25	25	
Solid Damper Trunnion		15	15	15	
Smokehood Check Draft Door Frame	50	75	1 25	1 50	2 50
Smokehood Check Draft Door	30	30	1 00	1 00	1 00
Smokehood Check Draft Door Ratchet	15	15	15	15	15
Top Front Damper Control Bracket	50	50	50	50	50
Bottom Front Damper Control Bracket	50	50	50	50	50
Top Rear Damper Control Bracket	50	50	50	50	50
Bottom Rear Damper Control Bracket	50	50	50	50	50
Damper Rod Handle, or Pull		50	50	50	50
Damper Rod Knuckle		40	40	40	40
Damper Lever		25	25	25	25
Long Damper Rod		50	75	1 00	1 25
Short Damper Rod		30	30	40	50
Top Nipples, each	4" 60	4" 60	6" 70	6" 70	6" 70
Bottom Nipples, each	2½" 60	3" 60	4" 60	4" 60	4" 60
Flue Brush Handle	1 00	1 00	1 25	1 25	2 00
Poker	1 50	1 75	2 50	3 00	3 50
Hoe and Handle	1 50	1 75	2 00	2 50	3 00
Draw Rods, 5 Section	1 25	2 25			
Draw Rods, 6 Section	1 50	2 50	2 75	3 25	5 50
Draw Rods, 7 Section	1 75	2 75	3 00	3 50	6 50
Draw Rods, 8 Section		3 00	3 25	3 75	7 50
Draw Rods, 9 Section			3 50	4 00	8 50
Draw Rods, 10 Section				4 25	9 50
Draw Rods, 11 Section					10 50

*48 Ser. Sec. list price for each half. °Formerly 24-inch. ‡Formerly 21-inch.

Laundry Type

NOYES No. 1

Name of Part			Name of Part		
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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SERIES "B"

Name of Part	[illegible]	[illegible]	[illegible]
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Smoke Dome Type

Name of Part	No. 106	No. 107A	No. 112	No. 118	No. 119
Firepot	$32.00	$37.00	$39.00	$44.00	$44.00
Smoke Dome	1.25	1.25	2.00	2.00	1.00
Smoke Dome Door					80
Smoke Dome Door Butcher					10
Smoke Dome Slide	20	20	15	15	
Fire Door Frame	90	90	1.00	1.25	1.50
Fire Door	50	50	75	.60	1.00
Fire Door Lugs					40
Fire Door Lugs	15	15	15	15	25
Fire Door Slide	10	10	10	10	10
Fire Door Slide Knob	05	05	05	05	05
Cinder Door Frame		60	75	85	1.00
Cinder Door		35	50	60	50
Outside Coal Opening Cover					15
Inside Coal Opening Cover					15
Base Casting	5.00	6.50	7.50	9.00	13.00
Base Bottom Plate	2.00	2.00	3.00	3.00	
Base Legs, each	50	50	75	90	50
Base Front Frame					1.50
Ashpit Door	90	90	90	1.00	1.00
Ashpit Door Slide	15	15	15	15	
Ashpit Door Slide Knob	10	10	10	10	
Ashpit Draft Door	15	15	15	15	50
Ashpit Draft Door Bracket					15
Ashpit Draft Door Knocker					10
Center Grate Bar				90	1.00
Outside Grate Bars, each			90	90	
Grate Connecting Bar			80	80	80
Side Center Grate	60	60			
Outside Grate (Side Center Type)	1.00	1.00			
Grate Supports, each	15	15			
Front Grate Bar					1.00
Back Grate Bar					1.00
Angle Lever Connecting Arm					20
Grate Lock					10
Angle Lever					15
Shaker Handle			90	80	75
Shaker Handle Bracket			55	55	
Grate Lever and Shaker	25	25			
Poker					35
Scraper					50
Shaker Handle Bracket			55	55	

No. 1 SERIES

No. 2 SERIES

STEAM TRIMMINGS

*Water Column, Gauling (Acme Type)	$1 50
Pipe and Pipe Fittings for Water Column (Acme Type)	2 50
xSet ¾-inch Gauge Cocks, complete with Glass and Guards	5 00
Set ½-inch Gauge Cocks, complete with Glass and Guards	4 50
¾-inch Try-Cocks, each	90
½-inch Try-Cocks, each	1 15
Steam Gauge Siphon	20

All-Metal Damper Regulator, complete (See Specialties Sheet for Price)
xxNovus Steam Gauge (See Specialties Sheet for Price)

Pop Safety Valves are furnished with all Steam Boilers.

1-inch Valve on 30 Series Novus Upright and 17-inch, 19-inch and 22-inch Acme.

1¼-inch Valve on 30 Series Novus Upright, 5 Section, 30 Series Sectional, 4 to 6 Section Radiun and 24-inch Acme.

1½-inch Valve on 30 and 40 series Novus Upright, 6 and 7 Section, 30 Series Sectional and 7 to 9 Section Radiator.

2-inch Valve on 30 Series Sectional, 9 Section, 30 Series Smokeless and 10 to 14 Section Radiator.

2½-inch Valve on 30 Series and 6 Section, 36 Series Sectional; 10 to 12 Section, 30 and 9 Section 30 Series Smokeless; 16 to 20 Section Radiator.

3-inch Valve on 7 to 10 Section, 36 Series Sectional and 10 and 11 Section, 30 Series Smokeless.

3½-inch Valve on 12 and 13 Section, 30 Series and 10 and 11 Section, 36 Series Smokeless.

4-inch Valve on 12, 13 and 14 Sections, 36 Series Smokeless.

4½-inch Valve on 13 and 14 Section, 36 Series Smokeless.

Two 2½-inch Valves on 6 and 7 Section and Two 3-inch Valves on 8 and 9 Section 48 Series Sectional; one 3-inch and one 4½-inch valve on 10 and 11 Section Sectional and 9 Section Smokeless, 48 Series; one 3-inch and one 4-inch Valve on 10 and 11 Section; one 3½-inch and one 4-inch Valve on 12 Section; two 4-inch Valves on 13 and 14 Section and one 4-inch and one 4½-inch Valve on 13 and 14 Section, 48 Series Smokeless.

(See Specialties Sheet for Price on Safety Valves)

Large Novus Pipe Brush supplied with 31, 36 and 48 Series Sectional and Smokeless.

Medium Novus Pipe Brush supplied with all other Boilers.

(See Specialties Sheet for price of Pipe Brushes)

LIST PRICE OF PARTS TO INCREASE BOILER ONE SIZE

Novus Sectional	Steam or Water	National Smokeless	Steam or Water
20-Inch	$ 45 00	18-Inch	$ 70 00
22-Inch	50 00	21-Inch	125 00
24-Inch	125 00	26-Inch	160 00
30-Inch	150 00	48-Inch	230 00
40-Inch	225 00		

Novus Upright	Steam or Water	Acme Round	Steam or Water
30 Series	$25 00	17-Inch	$14 00
40 Series	28 00	19-Inch	16 00
50 Series	36 00	22-Inch	18 00
60 Series	44 00	24-Inch	26 00

*All Novus Upright, Novus Sectional and Smokeless Boilers have Water Columns cast on Sections.

xxAll trimmings used on Acme, Radiator, 30, 36 and 48 Series Sectional and Smokeless Boilers. Acorn Trimmings used on Novus Upright, 30 and 40 Series Sectional and Smokeless.

xxAll 3½-inch Steam Gauge used on Acme, Radiator and Novus Upright; 4½-inch Steam Gauge on Sectional and Smokeless.

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NATIONAL
Boilers and Radiator

NATIONAL RADIATOR COMPAN